

552194

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number
WO 2004/091370 A2

- (51) International Patent Classification⁷: **A61B**
- (21) International Application Number:
PCT/US2004/011168
- (22) International Filing Date: 12 April 2004 (12.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/461,974 10 April 2003 (10.04.2003) US
- (71) Applicant (for all designated States except US): **THE TRUSTEES OF BOSTON UNIVERSITY [US/US];**
One Sherborn Street, Boston, MA 02218 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **NUGENT, Matthew, A. [US/US];** 6 Jeffrey Circle, Bedford, MA 01730 (US). **GEORGES, Adrienne, L. [US/US];** 44 Albion Street, Apt. 1, Somerville, MA 02143 (US).
- (74) Agents: **EISENSTEIN, Ronald, I. et al.;** Nixon Peabody LLP, 100 Summer Street, Boston, MA 02110 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

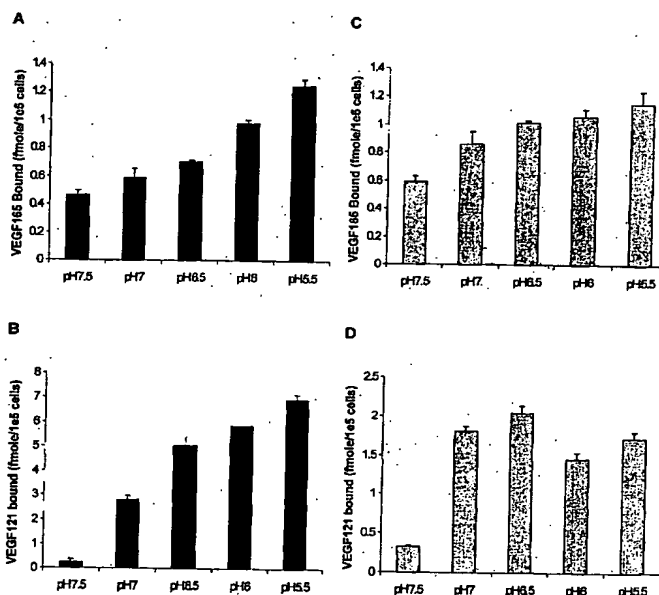
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR STIMULATING ANGIOGENESIS AND WOUND HEALING



(57) Abstract: A device comprising an extracellular matrix having an internal pH between 4.0 and 6.0 is discussed. This matrix contains heparin or a heparin-related compound such as heparan sulfate. Preferably the matrix also contains fibronectin or a fragment thereof. The matrix will bind to a protein having a pH dependent binding to heparin such as VEGF, preferably VEGF 121 or VEGF 165. The device will release the protein as the pH increases to physiological pH, such as 7.0 to 7.5. The device can be used to deliver a drug to a specific site. For example, with VEGF to a site in need of angiogenesis.

WO 2004/091370 A2